



Sequence Listing

<110> Reilly, Dorothea
Yansura, Daniel G.

<120> METHODS AND COMPOSITIONS FOR INCREASING ANTIBODY PRODUCTION

<130> 11669.195USU1

<140> US 10/697,995

<141> 2003-10-30

<150> US 60/422,952

<151> 2002-10-31

<160> 37

<210> 1

<211> 3300

<212> DNA

<213> Artificial Sequence

<220>

<223> anti-TF vector

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atagtcgctt tgtttttatt ttttaatgta tttgtaacta gtacgcaagt 400

tcacgtaaaa agggatatcta gaattatgaa gaagaatata gcatttcttc 450

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<210> 2

<211> 237

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-TF light chain

<400> 2

Met Lys Lys Asn Ile Ala Phe Leu Leu Ala Ser Met Phe Val Phe

1	5	10	15
Ser Ile Ala Thr Asn Ala Tyr Ala Asp Ile Gln Met Thr Gln Ser	20	25	30
Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr	35	40	45
Cys Arg Ala Ser Arg Asp Ile Lys Ser Tyr Leu Asn Trp Tyr Gln	50	55	60
Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile Tyr Tyr Ala Thr	65	70	75
Ser Leu Ala Glu Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser	80	85	90
Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp	95	100	105
Phe Ala Thr Tyr Tyr Cys Leu Gln His Gly Glu Ser Pro Trp Thr	110	115	120
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala	125	130	135
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser	140	145	150
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg	155	160	165
Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly	170	175	180
Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr	185	190	195
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu	200	205	210
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser	215	220	225
Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys	230	235	

<210> 3

<211> 470

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-TF heavy chain

<400> 3

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Ser	Ile	Ala	Thr	Asn	Ala	Tyr	Ala	Glu	Val	Gln	Leu	Val	Glu	Ser	
				20					25					30	
Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	
				35					40					45	
Ala	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Glu	Tyr	Tyr	Met	His	Trp	Val	
				50					55					60	
Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Gly	Leu	Ile	Asp	
				65					70					75	
Pro	Glu	Gln	Gly	Asn	Thr	Ile	Tyr	Asp	Pro	Lys	Phe	Gln	Asp	Arg	
				80					85					90	
Ala	Thr	Ile	Ser	Ala	Asp	Asn	Ser	Lys	Asn	Thr	Ala	Tyr	Leu	Gln	
				95					100					105	
Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	
				110					115					120	
Arg	Asp	Thr	Ala	Ala	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	
				125					130					135	
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	
				140					145					150	
Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	
				155					160					165	
Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	
				170					175					180	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	
				185					190					195	
Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	
				200					205					210	
Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	
				215					220					225	
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	
				230					235					240	
Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	
				245					250					255	
Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	
				260					265					270	
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	
				275					280					285	

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp	290	295	300
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg	305	310	315
Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr	320	325	330
Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys	335	340	345
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser	350	355	360
Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro	365	370	375
Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys	380	385	390
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu	395	400	405
Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val	410	415	420
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val	425	430	435
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val	440	445	450
Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser	455	460	465
Leu Ser Pro Gly Lys	470		

<210> 4

<211> 3242

<212> DNA

<213> Artificial sequence

<220>

<223> Anti-TF vector

<400> 4

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tcgcaatatg gcgcaaaatg accaacagcg gttgattgat caggtagagg 200

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<210> 5

<211> 237

<212> PRT

<213> Artificial sequence

<220>

<223> Anti-TF light chain

<400> 5

Met	Lys	Lys	Asn	Ile	Ala	Phe	Leu	Leu	Ala	Ser	Met	Phe	Val	Phe	1	5	10	15
Ser	Ile	Ala	Thr	Asn	Ala	Tyr	Ala	Asp	Ile	Gln	Met	Thr	Gln	Ser	20	25	30	
Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	35	40	45	
Cys	Arg	Ala	Ser	Arg	Asp	Ile	Lys	Ser	Tyr	Leu	Asn	Trp	Tyr	Gln	50	55	60	
Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Val	Leu	Ile	Tyr	Tyr	Ala	Thr	65	70	75	
Ser	Leu	Ala	Glu	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	80	85	90	
Gly	Thr	Asp	Tyr	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	95	100	105	
Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Gly	Glu	Ser	Pro	Trp	Thr	110	115	120	
Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg	Thr	Val	Ala	Ala	125	130	135	
Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	140	145	150	
Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	155	160	165	
Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	Gly	170	175	180	

Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr
				185					190					195
Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu
				200					205					210
Lys	His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser
				215					220					225
Ser	Pro	Val	Thr	Lys	Ser	Phe	Asn	Arg	Gly	Glu	Cys			
				230					235					

<210> 6
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 <212> PRT
 <213> Artificial sequence

<220>
 <223> Anti-TF heavy chain

<400> 6

Met	Lys	Lys	Asn	Ile	Ala	Phe	Leu	Leu	Ala	Ser	Met	Phe	Val	Phe
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Ser	Ile	Ala	Thr	Asn	Ala	Tyr	Ala	Glu	Val	Gln	Leu	Val	Glu	Ser
				20					25					30
Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys
				35					40					45
Ala	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Glu	Tyr	Tyr	Met	His	Trp	Val
				50					55					60
Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Gly	Leu	Ile	Asp
				65					70					75
Pro	Glu	Gln	Gly	Asn	Thr	Ile	Tyr	Asp	Pro	Lys	Phe	Gln	Asp	Arg
				80					85					90
Ala	Thr	Ile	Ser	Ala	Asp	Asn	Ser	Lys	Asn	Thr	Ala	Tyr	Leu	Gln
				95					100					105
Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala
				110					115					120
Arg	Asp	Thr	Ala	Ala	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu
				125					130					135
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro
				140					145					150
Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu
				155					160					165
Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser
				170					175					180

10

Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	
				185					190					195	
Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	
				200					205					210	
Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	
				215					220					225	
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	
				230					235					240	
Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	
				245					250					255	
Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	
				260					265					270	
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	
				275					280					285	
Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	
				290					295					300	
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	
				305					310					315	
Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	
				320					325					330	
Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	
				335					340					345	
Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	
				350					355					360	
Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	
				365					370					375	
Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	
				380					385					390	
Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	
				395					400					405	
Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	
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Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	
				425					430					435	
Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	
				440					445					450	
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465

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<211> 3300

<212> DNA

<213> Artificial Sequence

<220>

<223> anti-VEGF vector

<400> 7

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<210> 8

<211> 237

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-VEGF light chain

<400> 8

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Ser	Ile	Ala	Thr	Asn	Ala	Tyr	Ala	Asp	Ile	Gln	Leu	Thr	Gln	Ser
				20					25					30
Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr
				35					40					45
Cys	Ser	Ala	Ser	Gln	Asp	Ile	Ser	Asn	Tyr	Leu	Asn	Trp	Tyr	Gln
				50					55					60
Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Val	Leu	Ile	Tyr	Phe	Thr	Ser

	65	70	75
Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser	80	85	90
Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp	95	100	105
Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Thr Val Pro Trp Thr	110	115	120
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala	125	130	135
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser	140	145	150
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg	155	160	165
Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly	170	175	180
Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr	185	190	195
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu	200	205	210
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser	215	220	225
Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys	230	235	

<210> 9

<211> 476

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-VEGF heavy chain

<400> 9

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Ser Ile Ala Thr Asn Ala Tyr Ala Glu Val Gln Leu Val Glu Ser	20	25	30	
Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys	35	40	45	
Ala Ala Ser Gly Tyr Asp Phe Thr His Tyr Gly Met Asn Trp Val	50	55	60	

Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Gly	Trp	Ile	Asn	
				65					70					75	
Thr	Tyr	Thr	Gly	Glu	Pro	Thr	Tyr	Ala	Ala	Asp	Phe	Lys	Arg	Arg	
				80					85					90	
Phe	Thr	Phe	Ser	Leu	Asp	Thr	Ser	Lys	Ser	Thr	Ala	Tyr	Leu	Gln	
				95					100					105	
Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	
				110					115					120	
Lys	Tyr	Pro	Tyr	Tyr	Tyr	Gly	Thr	Ser	His	Trp	Tyr	Phe	Asp	Val	
				125					130					135	
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	
				140					145					150	
Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	
				155					160					165	
Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	
				170					175					180	
Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	
				185					190					195	
Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	
				200					205					210	
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	
				215					220					225	
Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	
				230					235					240	
Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	
				245					250					255	
Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	
				260					265					270	
Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	
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Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	
				290					295					300	
Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	
				305					310					315	
Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	
				320					325					330	
Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	
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Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	
				350					355					360	
Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	
				365					370					375	
Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	
				380					385					390	
Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	
				395					400					405	
Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	
				410					415					420	
Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	
				425					430					435	
Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	
				440					445					450	
Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	
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<211> 3255

<212> DNA

<213> Artificial sequence

<220>

<223> Anti-VEGF vector

<400> 10

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 <211> 237
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Anti-VEGF light chain

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 35 40 45
 Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp Tyr Gln
 50 55 60
 Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile Tyr Phe Thr Ser
 65 70 75
 Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
 80 85 90
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
 95 100 105
 Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Thr Val Pro Trp Thr
 110 115 120
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
 125 130 135
 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
 140 145 150
 Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg
 155 160 165
 Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
 170 175 180
 Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 185 190 195
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
 200 205 210
 Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
 215 220 225
 Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
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230

235

<210> 12
 <211> 479
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Anti-VEGF heavy chain

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 35 40 45
 Ala Ala Ser Gly Tyr Thr Phe Thr Asn Tyr Gly Ile Asn Trp Val
 50 55 60
 Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Trp Ile Asn
 65 70 75
 Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Ala Asp Phe Lys Arg Arg
 80 85 90
 Phe Thr Phe Ser Leu Asp Thr Ser Lys Ser Thr Ala Tyr Leu Gln
 95 100 105
 Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
 110 115 120
 Lys Tyr Pro His Tyr Tyr Val Asn Glu Arg Lys Ser His Trp Tyr
 125 130 135
 Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
 140 145 150
 Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 155 160 165
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp
 170 175 180
 Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
 185 190 195
 Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
 200 205 210
 Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
 215 220 225

Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	
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Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	
				245					250					255	
His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	
				260					265					270	
Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	
				275					280					285	
Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	
				290					295					300	
Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	
				305					310					315	
Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	
				320					325					330	
Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	
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Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	
				350					355					360	
Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	
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Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	
				380					385					390	
Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	
				395					400					405	
Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	
				410					415					420	
Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	
				425					430					435	
Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	
				440					445					450	
Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	
				455					460					465	
Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys		
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<210> 13

<211> 1139

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

<400> 13

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tgtcgtcaa ggcgcactcc cgttctggat aatgtttttt gcgccgacat 200
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<210> 14

<211> 1139

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 14

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<210> 15

<211> 270

<212> PRT

<213> E. coli

<400> 15

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Pro Ala Thr Ala Ala Asp Ser Lys Ala Ala Phe Lys Asn Asp Asp	35	40	45
Gln Lys Ser Ala Tyr Ala Leu Gly Ala Ser Leu Gly Arg Tyr Met	50	55	60
Glu Asn Ser Leu Lys Glu Gln Glu Lys Leu Gly Ile Lys Leu Asp	65	70	75
Lys Asp Gln Leu Ile Ala Gly Val Gln Asp Ala Phe Ala Asp Lys	80	85	90
Ser Lys Leu Ser Asp Gln Glu Ile Glu Gln Thr Leu Gln Ala Phe	95	100	105
Glu Ala Arg Val Lys Ser Ser Ala Gln Ala Lys Met Glu Lys Asp	110	115	120
Ala Ala Asp Asn Glu Ala Lys Gly Lys Glu Tyr Arg Glu Lys Phe	125	130	135
Ala Lys Glu Lys Gly Val Lys Thr Ser Ser Thr Gly Val Leu Tyr	140	145	150
Gln Val Val Glu Ala Gly Lys Gly Glu Ala Pro Lys Asp Ser Asp	155	160	165
Thr Val Val Val Asn Tyr Lys Gly Thr Leu Ile Asp Gly Lys Glu	170	175	180
Phe Asp Asn Ser Tyr Thr Arg Gly Glu Pro Leu Ser Phe Arg Leu	185	190	195
Asp Gly Val Ile Pro Gly Trp Thr Glu Gly Leu Lys Asn Ile Lys	200	205	210
Lys Gly Gly Lys Ile Lys Leu Val Ile Pro Pro Glu Leu Ala Tyr	215	220	225
Gly Lys Ala Gly Val Pro Gly Ile Pro Pro Asn Ser Thr Leu Val	230	235	240
Phe Asp Val Glu Leu Leu Asp Val Lys Pro Ala Pro Lys Ala Asp	245	250	255
Ala Lys Pro Glu Ala Asp Ala Lys Ala Ala Asp Ser Ala Lys Lys	260	265	270

<210> 16
 <211> 3000
 <212> DNA

<213> Artificial sequence

<220>

<223> Anti-TF vector

<400> 16

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gggcgctgta cgaggtaaag cccgatgccg gcattcctga cgacgatacg 250
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atagtcgctt tgtttttatt ttttaatgta tttgtaacta gtacgcaagt 400
tcacgtaaaa agggatatcta gaattatgaa aaagaatatc gcatttcttc 450
ttgcatctat gttcgttttt tctattgcta caaacgcgta cgctgatata 500
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<210> 17

<211> 237

<212> PRT

<213> Artificial sequence

<220>

<223> Anti-TF light chain

<400> 17

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Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	35	40	45	
Cys	Arg	Ala	Ser	Arg	Asp	Ile	Lys	Ser	Tyr	Leu	Asn	Trp	Tyr	Gln	50	55	60	
Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Val	Leu	Ile	Tyr	Tyr	Ala	Thr	65	70	75	
Ser	Leu	Ala	Glu	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	80	85	90	
Gly	Thr	Asp	Tyr	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	95	100	105	
Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Gly	Glu	Ser	Pro	Trp	Thr	110	115	120	
Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg	Thr	Val	Ala	Ala	125	130	135	
Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	140	145	150	
Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	155	160	165	

Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	Gly
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Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr
				185					190					195
Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu
				200					205					210
Lys	His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser
				215					220					225
Ser	Pro	Val	Thr	Lys	Ser	Phe	Asn	Arg	Gly	Glu	Cys			
				230					235					

<210> 18
 <211> 470
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Anti-TF heavy chain

<400> 18														
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				20					25					30
Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys
				35					40					45
Ala	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Glu	Tyr	Tyr	Met	His	Trp	Val
				50					55					60
Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Gly	Leu	Ile	Asp
				65					70					75
Pro	Glu	Gln	Gly	Asn	Thr	Ile	Tyr	Asp	Pro	Lys	Phe	Gln	Asp	Arg
				80					85					90
Ala	Thr	Ile	Ser	Ala	Asp	Asn	Ser	Lys	Asn	Thr	Ala	Tyr	Leu	Gln
				95					100					105
Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala
				110					115					120
Arg	Asp	Thr	Ala	Ala	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu
				125					130					135
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro
				140					145					150
Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu
				155					160					165
									29					

Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	
				170					175					180	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	
				185					190					195	
Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	
				200					205					210	
Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	
				215					220					225	
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	
				230					235					240	
Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	
				245					250					255	
Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	
				260					265					270	
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	
				275					280					285	
Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	
				290					295					300	
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	
				305					310					315	
Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	
				320					325					330	
Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	
				335					340					345	
Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	
				350					355					360	
Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	
				365					370					375	
Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	
				380					385					390	
Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	
				395					400					405	
Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	
				410					415					420	
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	
				425					430					435	
Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	
									30						

	440		445		450
Met	His	Glu	Ala	Leu	His
				Asn	His
				Tyr	Thr
				Gln	Lys
				Ser	Leu
				Ser	
				455	460
					465
Leu	Ser	Pro	Gly	Lys	
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<210> 19
 <211> 3000
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Anti-TF vector

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 gggcgctgta cgaggtaaag cccgatgccg gcattcctga cgacgatacg 250
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acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat 2850
gaggctctgc acaaccacta cagcagaag agcctctccc tgtctccggg 2900
taaataagca tgcgacggcc ctagagtccc taacgctcgg ttgccgccgg 2950
gcgttttttta ttgttaactc atgtttgaca gcttatcatc gataagcttt 3000

<210> 20

<211> 237

<212> PRT

<213> Artificial sequence

<220>

<223> Anti-TF light chain

<400> 20

Met	Lys	Lys	Asn	Ile	Ala	Phe	Leu	Leu	Ala	Ser	Met	Phe	Val	Phe	1	5	10	15
Ser	Ile	Ala	Thr	Asn	Ala	Tyr	Ala	Asp	Ile	Gln	Met	Thr	Gln	Ser	20	25	30	
Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	35	40	45	
Cys	Arg	Ala	Ser	Arg	Asp	Ile	Lys	Ser	Tyr	Leu	Asn	Trp	Tyr	Gln	50	55	60	
Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Val	Leu	Ile	Tyr	Tyr	Ala	Thr	65	70	75	
Ser	Leu	Ala	Glu	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	80	85	90	
Gly	Thr	Asp	Tyr	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	95	100	105	
Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Gly	Glu	Ser	Pro	Trp	Thr				33

	110		115		120
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala	125		130		135
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser	140		145		150
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg	155		160		165
Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly	170		175		180
Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr	185		190		195
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu	200		205		210
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser	215		220		225
Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys	230		235		

<210> 21

<211> 470

<212> PRT

<213> Artificial sequence

<220>

<223> Anti-TF heavy chain

<400> 21

Met Lys Lys Asn Ile Ala Phe Leu Leu Ala Ser Met Phe Val Phe	1	5	10	15
Ser Ile Ala Thr Asn Ala Tyr Ala Glu Val Gln Leu Val Glu Ser	20	25	30	
Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys	35	40	45	
Ala Ala Ser Gly Phe Asn Ile Lys Glu Tyr Tyr Met His Trp Val	50	55	60	
Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Leu Ile Asp	65	70	75	
Pro Glu Gln Gly Asn Thr Ile Tyr Asp Pro Lys Phe Gln Asp Arg	80	85	90	
Ala Thr Ile Ser Ala Asp Asn Ser Lys Asn Thr Ala Tyr Leu Gln	95	100	105	

Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	
				110					115					120	
Arg	Asp	Thr	Ala	Ala	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	
				125					130					135	
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	
				140					145					150	
Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	
				155					160					165	
Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	
				170					175					180	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	
				185					190					195	
Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	
				200					205					210	
Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	
				215					220					225	
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	
				230					235					240	
Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Ser	Pro	Pro	Ser	Pro	Ala	Pro	
				245					250					255	
Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	
				260					265					270	
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	
				275					280					285	
Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	
				290					295					300	
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	
				305					310					315	
Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	
				320					325					330	
Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	
				335					340					345	
Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	
				350					355					360	
Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	
				365					370					375	
Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	
				380					385					390	

Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu
				395					400					405
Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val
				410					415					420
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val
				425					430					435
Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val
				440					445					450
Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser
				455					460					465
Leu	Ser	Pro	Gly	Lys										
				470										

<210> 22
 <211> 44
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic

<400> 22
 caaatcttgt gacaaaactc acactagtcc accgtctcca gcac 44

<210> 23
 <211> 45
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic

<400> 23
 tcgggttttag aacactgttt tgagtgtgat cagggtggcag aggtc 45

<210> 24
 <211> 63
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic

<400> 24
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 tccccccaaa acc 63

<210> 25
 <211> 71

<212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 25
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 gagaaggggg gttttgggtt c 71

 <210> 26
 <211> 63
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 26
 cccaccgtcg ccggcacctg aactcctggg gggaccgtca gtcttcctct 50

 tcccccaaa acc 63

 <210> 27
 <211> 71
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 27
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 gagaaggggg gttttgggtt c 71

 <210> 28
 <211> 67
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 28
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 ctcttcccc caaaacc 67

 <210> 29
 <211> 67
 <212> DNA
 <213> Artificial sequence

 <220>

<223> Synthetic

<400> 29

agggtggcacg ggtcgtggac ttgaggaccc ccctggcagt cagaaggaga 50

agggggggttt tgggttc 67

<210> 30

<211> 67

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

<400> 30

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ctcttccccc caaaacc 67

<210> 31

<211> 67

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

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agggggggttt tgggttc 67

<210> 32

<211> 44

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

<400> 32

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<210> 33

<211> 38

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

<400> 33

gctgaaatgg gccccacatg cacggaggtg ttgaaaga 38

<210> 34

<211> 62
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 34
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 cagctcctaa cc 62

 <210> 35
 <211> 70
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 35
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 agaggtcgag gattggagct 70

 <210> 36
 <211> 35
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 36
 catactggta ccaggatcta gaggggaagat ttatg 35

 <210> 37
 <211> 28
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic

 <400> 37
 ctggtgagta ctcaaccaag tcattctg 28